# Comparative National Statistics: 1990



## Transportation Bill[1]

The *transportation bill* refers to the market value of all purchases of transportation services and facilities; it includes all domestic expenditures made by an economy for transportation purposes. Although the transportation bill does not reflect several significant nonmarket costs,[2] it is a useful indicator of a country's transportation expenditures, and transportation analysts closely follow changes in the bill and its components.

In 1990, the United States and Canadian transportation bills were, when examined on a per capita basis, similar. (See table 2.) The U.S. bill of $4,014 per person was only 18 percent higher than the Canadian bill estimated at $3,376. It is difficult to estimate a comparable Mexican transportation bill; available statistics indicate a per capita bill of $448—this figure is roughly 13 percent of the Canadian bill and 11 percent of the U.S. bill.

Table 2 Total and per Capita Transportation Bills: 1990

| | Canada | Mexico | U.S. | Total |
|---|---|---|---|---|
| **Total millions U.S. dollars** | 101,521 | 36,208◄ | 974,800 | 1,112,529◄ |
| Per Capita U.S. Dollars | 3,817 | 446◄ | 3,901 | 3,110◄ |
| **Total millions Can. dollars** | 118,475 | 42,255◄ | 1,135,913 | 1,296,643◄ |
| Per Capita Canadian Dollars | 4,454 | 520◄ | 4,545 | 3,624◄ |
| **Total billion pesos** | 285,477 | 101,839◄ | 2,741,138 | 3,128,454◄ |
| Per Capita 1,000 Pesos | 10,732 | 1,253◄ | 10,969 | 8,745◄ |
| Population (Millions) | 26.6 | 81.2 | 249.9 | 357.7 |

◄ Denotes estimate

Although the total transportation bills of Canada and the United States are similar, their relative distributions of expenditures among transportation modes differ markedly. (See table 3.) In both the Canadian and U.S. bills, domestic transport accounted for 96 to 97 percent of all transport expenditures. However, of the five domestic modes for which data are presented—highway, aviation, rail, water, and transit (including highway transit vehicles), the U.S. shares are greater for the highway and aviation modes while Canadian shares are larger for rail, water, and transit.[3]

Compared with domestic expenditures, the purchase of international freight and passenger services is relatively less important. The patterns of international transport expenditure do differ between the two countries, however. For example, as calculated from data in table 3, Canadians spend over a third more per capita (37 percent more) than do U.S. residents on the various types of international transportation. In particular, Canadian expenditures are higher for air transport: The Canadian figure of $110 per person is more than one and a half times the per capita U.S. expenditure of $69 per year. (Table 3.) The United States, with its more industrialized economy, spends 31 percent more per capita than does Canada on import and export shipments via water transport.

Table 3 Transportation Bills by Mode: 1990

| | Millions of U.S. Dollars | | | Millions of Canadian Dollars | | |
|---|---|---|---|---|---|---|
| | Canada | U.S. | Total | Canada | U.S. | Total |
| **Total** | 90,436 | 1,010,371 | 1,091,324 | 105,539 | 1,177,424 | 1,273,700 |
| **Domestic**[1] | 86,497 | 978,403 | 1,055,418 | 100,943 | 1,140,118 | 1,231,798 |
| Highway[2] | 69,621 | 817,448 | 879,132 | 81,248 | 953,962 | 1,025,947 |
| Aviation | 5,362 | 80,679 | 84,496 | 6,258 | 92,349 | 98,607 |
| Rail | 6,056 | 36,754 | 42,810 | 7,067 | 42,891 | 49,958 |
| Water[3] | 2,973 | 22,845 | 25,818 | 3,470 | 26,786 | 30,256 |
| Transit | 2,485 | 20,678 | 23,162 | 2,900 | 24,131 | 27,030 |
| **International** | 3,939 | 31,968 | 35,906 | 4,596 | 37,306 | 41,903 |
| Aviation | 2,930 | 17,244 | 20,174 | 3,419 | 20,124 | 23,543 |
| Water | 1,009 | 14,724 | 15,732 | 1,177 | 17,183 | 18,360 |

| | Millions of U.S. Dollars per Capita | | | Millions of Canadian Dollars per Capita | | |
|---|---|---|---|---|---|---|
| | Canada | U.S. | Total | Canada | U.S. | Total |
| **Total per Capita** | 3,400 | 4,043 | 3,947 | 3,968 | 4,712 | 4,607 |
| **Domestic** | 3,252 | 3,915 | 3,817 | 3,795 | 4,562 | 4,455 |
| Highway | 2,617 | 3,271 | 3,180 | 3,054 | 3,817 | 3,710 |
| Aviation | 202 | 323 | 306 | 235 | 370 | 357 |
| Rail | 228 | 147 | 155 | 266 | 172 | 181 |
| Water | 112 | 91 | 93 | 130 | 107 | 109 |
| Transit | 93 | 83 | 84 | 109 | 97 | 98 |
| **International** | 148 | 128 | 130 | 173 | 149 | 152 |
| Aviation | 110 | 69 | 73 | 129 | 81 | 85 |
| Water | 38 | 59 | 57 | 44 | 69 | 66 |

| | Percentages | | |
|---|---|---|---|
| | Canada | U.S. | Total |
| **Domestic** | 95.64 | 96.84 | 96.71 |
| Highway | 76.98 | 80.91 | 80.56 |
| Aviation | 5.93 | 7.99 | 7.74 |
| Rail | 6.70 | 3.64 | 3.92 |
| Water | 3.29 | 2.26 | 2.37 |
| Transit | 2.75 | 2.05 | 2.12 |
| **International** | 4.36 | 3.16 | 3.29 |
| Aviation | 3.24 | 1.71 | 1.85 |
| Water | 1.12 | 1.46 | 1.44 |

Notes:

1. Exludes animal-drawn vehicles, bicycles, off-road vehicles, air cushion vehicles, and other transportation for which statistics could not be found.
2. Excludes transit buses which are accounted for under Transit.
3. Exludes transit ferries, which are accounted for under Transit. Also excludes the costs of operation of about 113,000 U.S. fishing vessels and approximately 58,000 Canadian ones, for which no cost information coud be found.

Table 4 Total and per Capita by Mode: 1990

| | Person-Miles, Millions | | | | Person-Kilometers, Millions | | | |
|---|---|---|---|---|---|---|---|---|
| | Canada | Mexico | U.S. | Total | Canada | Mexico | U.S. | Total |
| **Total** | 269,708◄ | 175,744◄ | 3,251,232 | 3,696,684◄ | 433,961◄ | 282,772◄ | 5,231,232 | 5,947,965◄ |
| Highway[1] | 249,610 | 158,725◄ | 2,854,568 | 3,262,903◄ | 401,623 | 255,388◄ | 4,593,000 | 5,250,011◄ |
| Aviation[2] | 16,448 | 6,459 | 360,934 | 383,842 | 26,466 | 10,393 | 580,743 | 617,602 |
| Rail[3] | 3,171 | 10,483 | 25,253 | 38,907 | 5,102 | 16,867 | 40,632 | 62,601 |
| Water[4] | 479◄ | 77◄ | 10,477◄ | 11,033◄ | 770◄ | 124◄ | 16,857◄ | 17,752◄ |
| **Total/population** | 10,139◄ | 2,163◄ | 13,010◄ | 10,333◄ | 16,314◄ | 3,480◄ | 20,933◄ | 16,626◄ |

| | Percentages | | | |
|---|---|---|---|---|
| | Canada | Mexico | U.S. | Total |
| **Total** | 100.00 | 100.00 | 100.00 | 100.00 |
| Highway[1] | 92.55◄ | 90.32◄ | 87.80 | 88.27◄ |
| Aviation[2] | 6.10 | 3.68 | 11.10 | 10.38 |
| Rail[3] | 1.18 | 5.96 | 0.78 | 1.05 |
| Water[4] | 0.18◄ | 0.04◄ | 0.32◄ | 0.30◄ |

Notes

◄ Denotes estimate

1. Includes private and commercial, but excludes crews of freight vehicles and buses. U.S. and Canadian figures both based on U.S. car and small-truck occupancy rates and percent and personal versus business trucks. Mexican figures were estimated based on vehicle registrations, bridge and toll station counts, fuel consumption figures, and typical fuel consumption rates by class of vehicle. The Mexico estimates assume an average of 14,627 km (9,069 mi.) per year per car and 16,700 km (10,354 mi.) per two-axle truck per year (both figures are less than those of Canada or the United States). A small vehicle occupancy rate of two people was assumed greater than that for Canada or the United States, which have smaller average family sizes. The Mexican figures assume roughly 33,000 and 19,300 transit buses plus intercity buses.
2. Includes revenue passengers plus estimate of noncommercial passengers.
3. Fare-paying passengers figure includes light and heavy rail transit. Mexican figures assume 7.87 kilometer (4.89 mile) average trip length per Mexico City subway passenger.
4. These figures are mainly ferryboat statistics. Canadian figures assume a 22.8 kilometer (14.2 mile) average passenger trip distance. The U.S. figure assumes 97.44 million passenger-kilometers (60.56 million passenger-miles) per ferry (experience of 119 urban ferries). The Mexican figure assumes a 33.8 kilometer (21 mile)-per-passenger average trip length.

## Domestic Passenger Travel

Data on passenger travel, as measured by person-distance, are not exact for the three countries. In particular, a number of assumptions were made to estimate person-distance travel by highway. (See table 4.)

The predominant mode of passenger travel in all three countries is by highway. Highway travel constitutes over 90 percent of the passenger-kilometers in both Canada and Mexico, and about 88 percent in the United States. At the other end of the spectrum, the least common mode of passenger travel in the three countries is water transport. Mainly accomplished via urban ferryboats, this transport mode is quite minor, accounting for only a third of a percent in the United States, for example.

Between these extremes are some striking differences among the countries regarding the other modes of passenger travel. First, domestic air travel in the United States (measured by the proportion of person-kilometers of travel) is nearly double that in Canada and triple that in Mexico. This difference is greater than would be expected when expenditures for air transport are compared. For instance, U.S. per capita expenditures on domestic air travel are only 38 percent higher than in Canada. Perhaps this difference suggests longer distance U.S. air trips or lower U.S. airfares; some of the difference could be accounted for if Canadian expenditures on air freight were far higher than U.S. per capita air freight expenditures.

Table 5 Total and per Capita Freight Movement by Mode: 1990

| | Ton-Miles, Millions | | | | Tonne-Kilometers, Millions | | | |
|---|---|---|---|---|---|---|---|---|
| | Canada | Mexico | U.S. | Total | Canada | Mexico | U.S. | Total |
| **Total** | 413,054◄ | 123,957◄ | 4,843,245◄ | 5,380,256◄ | 603,190◄ | 181,017◄ | 7,072,673◄ | 7,856,880◄ |
| Highway[1] | 204,745◄ | 98,963◄ | 2,952,181◄ | 3,255,889◄ | 298,993◄ | 144,518◄ | 4,311,120◄ | 4,754,631◄ |
| Aviation[2] | 375 | 37◄ | 9,064 | 9,476◄ | 548 | 54◄ | 13,236 | 13,838◄ |
| Rail | 170,080 | 24,941 | 1,071,000 | 1,266,021 | 248,371 | 36,422 | 1,564,000 | 1,848,792 |
| Water[3] | 37,854 | 16◄ | 811,000 | 848,870◄ | 55,279 | 23◄ | 1,184,317 | 1,239,619◄ |
| **Total/population** | 15,528◄ | 1,526◄ | 19,381 | 15,039◄ | 24,985◄ | 2,455◄ | 31,184 | 24,198◄ |

| | Percentages | | | |
|---|---|---|---|---|
| | Canada | Mexico | U.S. | Total |
| **Total** | 100.00 | 100.00 | 100.00 | 100.00 |
| Highway[1] | 49.57◄ | 79.84◄ | 60.95◄ | 60.52◄ |
| Aviation[2] | 0.09 | 0.03◄ | 0.19 | 0.18 |
| Rail | 41.18 | 20.12 | 22.11 | 23.53 |
| Water[3] | 9.16 | 0.01◄ | 16.74 | 15.78◄ |

Notes

◄ Denotes estimate

1. The Canadian and Mexican road estimates were determined by multiplying estimated vehicle-kms by average freight loads for each truck type. Canadian vehicle-km for large trucks were derived from Canadian surveys of for-hire trucking firms. U.S. experience was used for small trucks (greater than 2-axle). Mexican values were estimated using Mexican point counts of traffic by vehicle type, fuel consumption, and registered trucks; and U.S. experience on distance traveled and average load for different vehicle types.
2. The Mexican value assumes cargo traveled the same average distance as passengers, 859 kilometers (532.6 miles).
3. The Mexican figure assumes an average trip distance per unit weight of 400 kilometers (248 miles).

The proportionate share of rail passenger-kilometers of travel is lowest for the United States. The Canadian relative market share of rail is 50 percent higher than that of the United States; the Mexican share is four times that of Canada.

## Domestic Freight Transport

Freight movement is often measured in terms of weight-distance (tonne-kilometers or ton-miles)—that is, the weight of the freight transported multiplied by the distance moved.[4] Data are available on this measure for highway, aviation, rail, and water transport (see table 5); similar data are not available for pipeline movement of crude oil and petroleum products.

The major freight mode as measured in terms of weight-distance is highway transport. In each of these three countries, trucks are responsible for more haulage than any other mode. Trucks are particularly pervasive in Mexico and the United States, where they account for about 80 percent of each country's total weight-distance of carriage. The comparable Canadian figure is considerably lower—just about 50 percent. Rail transport is responsible for 41 percent of Canada's total weight-distance of carriage; this mode makes up 20 percent of Mexico's freight share and 22 percent of the United States'. In all three countries, air freight weight-distances are quite small, accounting for less than one-fifth of 1 percent for the continent as a whole. Water weight-distances are similarly minimal for Mexico and relatively minor for Canada (9 percent of the total); in the United States, inland and intercoastal water transport of freight accounts for a far greater proportion of all freight movement—about 17 percent of the whole.

Table 6 Vehicles by Mode: 1990

| | Number | | | | Number per 1,000 Population | | |
|---|---|---|---|---|---|---|---|
| | Canada | Mexico | U.S. | Total | Canada | Mexico | U.S. |
| **Total, all modes** | 23,484,582 | 13,011,707 | 255,795,003 | 292,291,292 | 882.88 | 160.24 | 1,023.59 |
| **Highway** | 20,977,034 | 12,257,223 | 238,369,806 | 271,604,063 | 788.61 | 150.95 | 953.86 |
| Cars | 12,622,038 | 6,209,449 | 143,453,040 | 162,284,527 | 474.51 | 76.47 | 574.04 |
| Motorcycles | 331,075 | 218,698 | 4,259,462 | 4,809,235 | 12.45 | 2.69 | 17.04 |
| Buses, Total | 75,845 | 80,658 | 610,765 | 767,268 | 2.85 | 0.99 | 2.44 |
| Transit | 10,931 | 19,300◄ | 59,753 | 89,984◄ | 0.41 | 0.24 | 0.24 |
| School | 29,897 | 538,158 | 508,261 | n/a | 1.12 | 0.00 | 2.03 |
| Intercity | 3,717 | 35,211 | 19,491 | 58,419 | 0.14 | 0.43 | 0.08 |
| Other buses | 31,301 | 26,147 | 23,260 | 80,708 | 1.18 | 0.32 | 0.09 |
| Trucks, Total | 3,936,115 | 2,833,880 | 44,717,887 | 51,487,882 | 147.97 | 34.90 | 178.94 |
| 2-Axle, 4-Tire | 3,579,579◄ | 1,728,373◄ | 38,863,550 | 44,171,501◄ | 134.57 | 21.29◄ | 155.52 |
| Other units | 269,253◄ | 841,059◄ | 4,614,028 | 5,724,341◄ | 10.12 | 10.36◄ | 18.46 |
| Truck tractors | 87,283◄ | 264,448◄ | 1,240,309 | 1,592,040◄ | 3.28 | 3.26◄ | 4.96 |
| **Aviation** | 16,121 | 2,898 | 218,640 | 237,659 | 0.61 | 0.04 | 0.87 |
| Air Carrier aircraft | 641 | 196◄ | 6,483 | 7,320◄ | 0.02 | n/a | 0.03 |
| Other aircraft | 15,480 | 2,702◄ | 212,157 | 230,339◄ | 0.58 | 0.03◄ | 0.85 |
| **Rail** | 128,313 | 49,680 | 1,242,171 | 1,420,164 | 4.82 | 0.61 | 4.97 |
| Locomotives | 3,719 | 1,677 | 23,499 | 28,895 | 0.14 | 0.02 | 0.09 |
| Passenger cars | 1,088 | 993 | 1,996 | 4,077 | 0.04 | 0.01 | 0.01 |
| Freight cars | 123,137 | 47,010 | 1,212,261 | 1,382,408 | 4.63 | 0.58 | 4.85 |
| Commuter cars | 369 | n/a | 4,415 | 4,784 | 0.01 | n/a | 0.02 |
| **Water** | 2,360,936 | 698,761 | 15,952,222 | 19,011,919 | 88.76 | 8.61 | 63.83 |
| Recreation boats | 2,300,000 | 660,440◄ | 15,800,000 | 18,760,440◄ | 86.47 | 8.13◄ | 63.23 |
| Fishing vessels | 58,329◄ | 37,793◄ | 113,000 | 209,122◄ | 2.19◄ | 0.47◄ | 0.45 |
| Barges | 587 | n/a | 30,966 | 31,553 | 0.02 | n/a | 0.12 |
| Towboats/tugs | 378 | 120 | 5,210 | 5,708 | 0.01 | n/a | 0.02 |
| Ferries & passenger | 216 | 0◄ | 1,116 | 11,342◄ | 0.01 | n/a | n/a |
| Deep sea & Great Lakes | 550 | 80 | 470 | 1,100 | 0.02 | n/a | n/a |
| Other | 876 | 318 | 1,460 | 2,654 | 0.03 | 0.00 | 0.01 |
| **Transit**[1] | 2,178 | 3,145 | 12,164 | 17,487 | 0.08 | 0.04 | 0.05 |
| Heavy railcars | 1,379 | 2,304 | 10,419 | 14,102 | 0.05 | 0.03 | 0.04 |
| Light railcars | 527 | 29 | 913 | 1,469 | 0.02 | n/a | n/a |
| Trolleys | 272 | 812 | 832 | 1,916 | 0.01 | 0.01 | n/a |

Notes

◄ Denotes estimate

n/a Not available for this report

1. Mexican vehicles are for Mexico City only. Transit buses and commuter railcars are included above as highway or rail vehicles.

## Vehicles

With nearly 300 million transportation vehicles among them in 1990, the North American nations are not far from having one vehicle for every one of their combined 358 million residents. (See table 6.) The vehicles are mainly cars—about 162 million—and trucks—about 51 million. Collectively, the three countries also have some 19 million boats and ships, over one million rail vehicles, and over a quarter million aircraft. However, there are substantial differences in the relative distributions of vehicles among the three countries. For example, Mexico has about 151 highway vehicles per thousand population, versus 789 in Canada and 954

in the United States. There are some five rail vehicles per thousand people in both Canada and the United States, and not quite one per thousand in Mexico. Also, the two more northerly countries have relatively more water vessels and aircraft than does Mexico.

## Fuel Consumption

Most North American transportation is petroleum-fueled, although some transit vehicles (as well as some cars, vans, and intercity rail lines) are powered by electricity. Per capita petroleum use in Canada is almost 2,000 liters (525 gallons); U.S. per capita use is 18 percent more—2,364 liters (625 gallons). (See table 7.) Mexico, with its smaller per capita auto and truck fleet, consumes 493 liters (130 gallons) per person. Electricity use per capita for transportation is about the same in both the United States and Canada; Mexico consumes less than half the electricity per capita than do the other two countries.

Table 7 Fuel Consumption by Mode: 1990

| | Gallons, Millions | | | | Liters, Millions | | | |
|---|---|---|---|---|---|---|---|---|
| | Canada | U.S. | Mexico | Total | Canada | U.S. | Mexico | Total |
| Total | 13,975 | 156,104 | 10,584 | 180,662 | 52,895 | 590,854 | 40,060 | 683,809 |
| Highway[1] | 11,572 | 131,879 | 9,995◄ | 153,446◄ | 43,800 | 499,164 | 37,831◄ | 580,794◄ |
| Aviation[2] | 1,310 | 17,495 | 209◄ | 19,014◄ | 4,960 | 66,219 | 791◄ | 71,969◄ |
| Rail | 552 | 3,364 | 143◄ | 4,059◄ | 2,089 | 12,733 | 540◄ | 15,362◄ |
| Water | 541 | 3,365 | 238◄ | 4,143◄ | 2,046 | 12,738 | 899◄ | 15,683◄ |
| | Kilowatt Hours, Millions | | | | | | | |
| | Canada | U.S. | Mexico | Total | | | | |
| Transit[3] | 612 | 4,837 | 719◄ | 6,168◄ | | | | |
| | Gallons per Capita | | | | Liters per Capita | | | |
| | Canada | U.S. | Mexico | Total | Canada | U.S. | Mexico | Total |
| Petroleum | 525 | 625 | 130◄ | 505◄ | 1,989 | 2,364 | 493◄ | 1,912◄ |
| | Kilowatt Hours per Capita | | | | | | | |
| | Canada | U.S. | Mexico | Total | | | | |
| Electricity | 23.01 | 19.36 | 8.85◄ | 17.24◄ | | | | |

Notes

◄ Denotes estimate

1. Highway includes transit buses.
2. Aviation includes domestic and international flights.
3. Transit includes only electric vehicles. Mexican data are for Mexico City in electric vehicles only.

## Transportation Employment

In all three countries, vehicle operation engages the largest number of people employed in transportation-related occupations. (See table 8.) Moreover, the proportions of people employed as vehicle operators are quite similar for all three countries, ranging from about 20 per thousand in Mexico to about 22 in Canada and around 25 in the United States. Within the operation area, however, there are large differences by mode. For example, about four people out of every thousand persons in Mexico are employed in the taxi industry; fewer than one in a thousand are so employed in Canada or the United States. Approximately three people per thousand in both Canada and the United States are employed in commercial air travel, compared to fewer than one per thousand in Mexico. Also, about one person per thousand in either Mexico or the United States is employed in rail operation, versus about three in Canada.

Besides operation, the other areas of transportation employment are transportation equipment manufacturing, construction, government, and various commercial transport service fields. In all, 55 out of every thousand Canadians are employed in some aspect of transportation; 52 out of every thousand people in the United States are so employed. The comparable Mexican figure is 25, largely because Mexico has very little transportation equipment manufacturing, less road and

Table 8 Transportation Employment: 1990

| | Employment (in thousands) | | | | Employment per 1,000 Population | | |
|---|---|---|---|---|---|---|---|
| | Canada | Mexico | U.S. | Total | Canada | Mexico | U.S. |
| **Manufacturing*** | 295 | 90◄ | 2,238 | 2,624◄ | 10.97 | 1.11◄ | 8.96 |
| Highway equipment | 227 | 67◄ | 985 | 1,279◄ | 8.43 | 0.82◄ | 3.94 |
| Aviation equipment | 47 | 14◄ | 692 | 753◄ | 1.76 | 0.18◄ | 2.77 |
| Rail equipment | 6 | 380◄ | 374 | | 0.22 | 0.00◄ | 1.50 |
| Water equipment | 15 | 9◄ | 187 | 211◄ | 0.55 | 0.11◄ | 0.75 |
| **Construction** | 96 | 18◄ | 211 | 325◄ | 3.58 | 0.22◄ | 0.84 |
| Highway and rail | 96 | 18◄ | 211 | 325◄ | 3.58 | 0.22◄ | 0.84 |
| **Operation** | 589 | 1,658◄ | 6,311 | 8,559◄ | 21.90 | 20.42◄ | 25.26 |
| Private highway | 217◄ | 776◄ | 2,738◄ | 3,731◄ | 8.05◄ | 9.56◄ | 10.96◄ |
| For-hire highway | 204 | 760◄ | 2,420 | 3,384◄ | 7.58 | 9.36◄ | 9.69 |
| Trucks | 105 | 383◄ | 1,590 | 2,078◄ | 3.91 | 4.71◄ | 6.36 |
| Buses | 78 | 83◄ | 797 | 957◄ | 2.89 | 1.02◄ | 3.19 |
| Taxis | 21 | 295◄ | 33 | 349◄ | 0.78 | 3.63◄ | 0.13 |
| Commercial air | 70 | 21◄ | 741 | 833◄ | 2.60 | 0.26◄ | 2.97 |
| Rail | 70 | 82 | 277 | 430 | 2.61 | 1.01 | 1.11 |
| Water | 16 | 4◄ | 50 | 70◄ | 0.59 | 0.05◄ | 0.20 |
| Electric transit | 12 | 14◄ | 84 | 110◄ | 0.46 | 0.17◄ | 0.34 |
| **Other commercial** | 332 | 198◄ | 3,521 | 4,052◄ | 12.36 | 2.44◄ | 14.09 |
| **Government** | 171 | 55◄ | 780 | 1,006◄ | 6.36 | 0.68◄ | 3.12 |
| **Total transport** | 1,484 | 2,020◄ | 13,061 | 16,565◄ | 55.17 | 24.87◄ | 52.27 |
| **National employment** | 14,905 | 24,063◄ | 117,914 | 156,882◄ | | | |
| **Transportation/national** | 9.96% | 8.39%◄ | 11.08% | 10.56%◄ | | | |

Notes

◄ Denotes estimate

* Includes manufacture of transportation equipment that may be exported.

Table 9 Transportation Fatalities by Mode: 1990

| | Canada 1990 | Mexico[1] 1990 | U.S. 1990 | Total 1990 |
|---|---|---|---|---|
| **Total, all transportation** | 3,551 | 5,500◄ | 46,986 | 56,037◄ |
| **Highway** | 2,917 | 5,500◄ | 44,475 | 52,892◄ |
| **Aviation** | 87 | n/a | 838 | 925◄ |
| **Rail** | 103 | n/a | 599 | 702◄ |
| **Water** | 390 | n/a | 919 | 1,309◄ |
| **Other** | 54 | n/a | 155 | 209◄ |
| **National population, millions** | 26.6 | 67.7◄ | 249.9 | 344◄ |
| **Transportation fatalities per million population** | 133 | 81◄ | 188 | 163◄ |

Notes

◄ Denotes estimate

n/a Not available for this report.

1. No data were available on Mexico's fatalities or federal interest roads. Fatality statistics were also not available for the other transportation modes.

rail construction, and offers only about one-fifth the employment of the other two countries in transport services.

## Transportation Fatalities

The U.S. fatality rate of 188 per million population for 1990 is substantially higher than the Canadian figure of 133. (See table 9.) This disparity is due to fewer highway fatalities in Canada; deaths in other modes are either the same as for U.S. residents, or higher—as with rail and water transport. Since 1987, highway deaths per capita have fallen in the United States and Canada; available evidence suggests that Mexican road fatalities may have been increasing.

## Endnotes

1. In this report vehicular transport includes recreational boating and excludes pipelines. Methods different from other U.S. publications are used to calculate the bill for categories such as general aviation and private trucking. In order to enhance consistency among the national data sources, definitions for some categories—especially in aviation—also differ.

2. Among the nonmarket impacts that the transportation bill does not address are
   - uncompensated air, water, and noise pollution;
   - the cost of time expended for transportation purposes by transport users and private operators (e.g., transit riders and auto drivers);
   - related uncompensated accident loses and storage or inventory costs; and
   - potential alternative earnings from capital used for transportation vehicles and facilities.

On the other hand, the transportation bill double-counts certain effects. Specifically, it includes every transport expenditure made, even if a particular expenditure is an intermediate input to the production of final demand (e.g., part of a good's production cost or part of labor's value-added).

3. Some of these differences in modal shares between the Canadian and U.S. transportation bills are quite large. As calculated from the data in table 3, Canada spends about 85 percent more per capita on rail freight and intercity passenger movement than does the United States; the United States spends 38 percent more per capita on domestic air freight and passenger services than does Canada.

4. Tonne is the metric weight of 1,000 kilograms (2,205 pounds); ton is the U.S. statutory or "short" ton measure of 907.2 kilograms (2,000 pounds). Besides the tonne-kilogram indicator, other commonly reported freight output measures are

(1) using the tonne or ton as an indicator of the freight generated for haulage (this measure does not take into account the distance hauled or the value of service)

(2) monetary payment—the revenue received by the freight haulers (this must be estimated when freight is hauled by private carrier rather than a for-hire carrier).